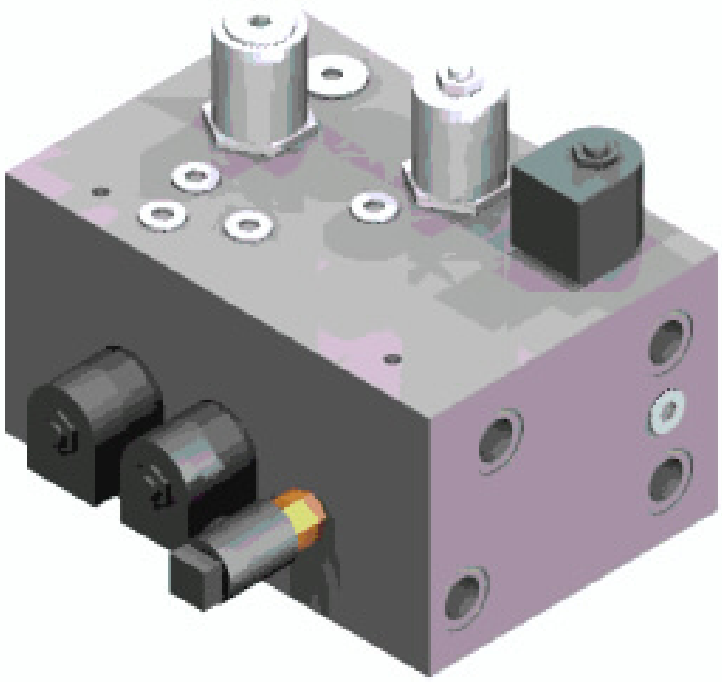
Accu-Cast

POWERFLOAT INSTALLATION AND USER MANUAL



Accu-Cast

ACCU-CAST POWER FLOAT INSTALLATION INSTRUCTIONS

Thank you for purchasing an *ACCU-CAST* power float system. The following instructions should allow you to install and set up the system without a problem.

The *ACCU-CAST 5100* Power float will work with most major brands of sanding system, however If you are not installing this power float on a P.H.E. III, P.H.E. IV, P.H.E. V or *ACCU-CAST 5100* system, please consult with *ACCU-CAST* about the compatibility of this system with your pump and valve.

***ACCU-CAST* recommends that you use this system with a double acting plow cylinder, however it should also work with a single acting cylinder.**

Please check over the contents of your installation kit to insure that it contains the following items before beginning.

1. **Power float manifold, complete with 3 solenoid valves, pressure and flow adjusters, and pressure switch.**

2. **Power float module, complete with wire harness, combination switch and pilot lamp.**

3. **16 pin CPC panel mount receptacle.**

4. **Valve harness C/W CPC plug (separate)**

5. **Shuttle valve (if required).**

6. **Instruction manual.**

The following instructions are divided into two headings, one for the electrical part and one for the hydraulics.

ELECTRICAL:

Begin the electrical installation by installing the circuit board in a convenient location inside the control console. The combination switch and lamp is next, if you do not have a vacant hole for it you will have to provide a 3/4" square hole for this purpose. (If this is a P.H.E. console you can remove the hot oil lamp, which is not used and install the power float switch in its place.) Cut a suitable hole and install the 16 pin CPC panel plugs in the console bottom. (If this is a P.H.E. IV, V or *ACCU-CAST* console you can use the pin locations provided for this purpose in the sensing plug.)

Please install the wire colors in the following pin locations so that they will match up properly with the cable. The pins are already installed for you.

You must use caution here because if you install a pin in the wrong hole and have to remove it you will require a special tool.

COLOR	PIN POSITION	FUNCTION
Orange	12	Sol. A
White	13	Sol. B&C
Black	14	Sol. Gnd.
Red	15	Pressure sw. Pos
Grey	16	Pressure sw. Sig.

Now that you have everything else hooked up you can tie the remaining red and black wires to 12 volt pos. Next, ground the blue and yellow wires to their respective sides of the double pole switch, and the brown wires to the lamp terminals of the switch as shown on the wiring diagram. The only wire left without a home now is the green one, which has to be tied in to the plow down side of the plow switch or joystick so that it is energized when you lower the plow.

Plug the new cable in to the new socket that you installed in the console and feed it through the cab floor with the other valve cables to the area that you have chosen to mount the valve manifold and secure it with cable ties along its entire length. (If your truck has a P.H.E. IV or newer system you may be using the existing space in the sensing socket as described above, in which case you will have to plug the cable pins into their proper locations in the existing sensing plug and then proceed as above.)

The colors and pin locations for the plug on the valve cable are as follows.

Blue	12	Sol. A
White	13	Sol. B&C
Black	14	Sol. Gnd
Red	15	Pressure sw. Pos
Green	16	Pressure sw. Pos

Again be careful not to put a pin in the wrong hole, as you will never get it out without the proper tool.

You can now check to be sure that the pressure switch is hooked up correctly for your application. Red wire to COM terminal and green wire to NC terminal for front plow float use or NO terminal for underbody plow use.

This completes the electrical part of the installation.

HYDRAULIC:

To begin the hydraulic part of the installation find a suitable location to mount the power float manifold. This block can be mounted to the side of the frame or any place else that is convenient. (1/4" all thread rod works well for this). Keep in mind when locating this block that you need to have enough room around it to easily hook up the entire hoses etc. It is generally best to mount it fairly close to the valve to save on hose. If you are close enough you may be able to disconnect the cylinder hoses from the valve and connect them directly to the block. Then you will have to make up two more hoses to

go from the block to the valve, at the same time you can make up a new pressure line, tank line and 1/4" sensing line.

Check the hydraulic schematic diagram to ensure that all lines are routed to the proper ports. The pressure will probably have to be tee'd into the main pressure line from the pump. The tank line can be installed into a spare port in the tank or tee'd into an existing line.

To hook up the sensing line you will have to disconnect the small 1/4"line from the directional control valve and hook it up to the middle port on the supplied shuttle valve. One end of the shuttle can then be plumbed to the port on the directional valve and the remaining end can be routed via hose to the power float block downstream of the reducing valve port.

NOTE:

All ports on the float block are clearly marked as follows:

PORT	DESCRIPTION
V1	PLOW UP FROM DIRECTIONAL VALVE
V2	PLOW DOWN FROM DIRECTIONAL VALVE
C1	PLOW UP TO BOTTOM OF PLOW CYL.
C2	PLOW DOWN TO TOP OF PLOW CYL.
P	PRESSURE FROM PUMP
T	RETURN LINE TO TANK
LS	SENSE LINE TO SHUTTLE VALVE
PS	FOR PRESSURE SWITCH

ADJUSTMENTS:

Begin the adjustments by identifying the three points that will need to be tweaked. On the face of the float valve next to the solenoid is the flow control, it has a 1/4" Allen head set screw and a jam nut. Next to it and slightly above is the pressure reducing and relieving valve it has a 5/16" Allen plug with an adjustment screw underneath (some newer models may have the same arrangement as the flow control). The pressure switch is on top of the block in the port marked PS, it may be one of several types with the adjustment in a box or on the end of the cartridge.

For front plow use: Start the truck and turn on the power float and select and release plow down several times. Observe the speed with which the slack in the plow cable or chain is taken up by the power float system. Use the flow control to adjust this speed to a nice rate so as not to have the arm bang against the plow weight. Now adjust the reducing valve so that the float system is taking the required amount of plow weight off the ground (this amount is arbitrary and will differ according to company requirements and/or operator preference. Once the pressure is set you can jump in the cab and raise the plow while observing the float pilot lamp. Once the hydraulics take up the full weight of the plow the lamp should turn off and the plow should stay up. If the lamp does not go out reduce the value on the pressure switch until it does. (The pressure switch must be set at a value between the pressure set on the float and that which it takes to carry the plow.) If it is set

too low the float pressure will turn it off and the lamp will not be on during normal float operation. If it is set too high it will not be turned off by the carry weight of the plow and the reducing relieving valve will allow the plow to descend from the carry position to the ground. Any time the reducing valve pressure is changed you will have to check the setting on the pressure switch.

For Under body Plow use: Start the truck and turn on the power float and observe the Light in the switch, it should be off. If the light is on, check the connections at the pressure switch to ensure that you are connected to the normally open contacts. Select plow down, once the plow is down and some pressure is built the light in the switch should come on indicating that the float system is now active. If the lamp does not come on and stay on reduce the value on the pressure switch until it does. Be sure the flow control is opened far enough (clockwise) to allow free movement of the plow to follow the contour of the road. Now install a gauge in the plow down side of the circuit and adjust the reducing valve so that the float system is providing the required amount of down pressure on the plow (this amount is arbitrary and will differ according to company requirements and/or operator preference). As you are adjusting the pressure you may have to re adjust the pressure switch to keep the system on. Once the pressure is set you can jump in the cab and raise the plow while observing the float pilot lamp. Once the hydraulics release the down pressure, the lamp should turn off and the plow should stay up. (The pressure switch must be set at a value between zero and the setting of the reducing valve.) If it is set too high the pressure created by the reducing valve will not be sufficient to keep the switch closed and the system active. Any time the reducing valve pressure is changed you should check the setting on the pressure switch.

This concludes the installation of your *ACCU-CAST* Power float. It should give you many seasons of trouble free service.

ACCU-CAST POWERFLOAT OPERATION FOR FRONT PLOW

In normal operating mode, solenoid B & C are not energized. Solenoid A must be energized to lower plow.

When float switch is turned on, the normally closed pressure switch is closed, allowing relays 2 & 3 to energize solenoids A, B, & C, supplying reduced pressure to the piston end o the plow cylinder, to carry some of the plow weight. The back flow feature of valves CP500-2 and the CP230-31-B pressure reducing-relieving valve will allow the plow to follow the contour o the road.

While the *ACCU-CAST* float is on, if the plow is raised the increased pressure at port C-1 will cause the pressure switch to open the circuit and de-energize solenoids A, B & C. The check at CP500-2 will allow the plow to be carried until solenoid A is energized by a plow down signal (The pressure switch is set at a value somewhat above that of the reducing valve). When the plow is lowered, the reduced pressure at port C-1 will allow the pressure switch to close the circuit and re-energize solenoids A, B, & C to return to the float function.

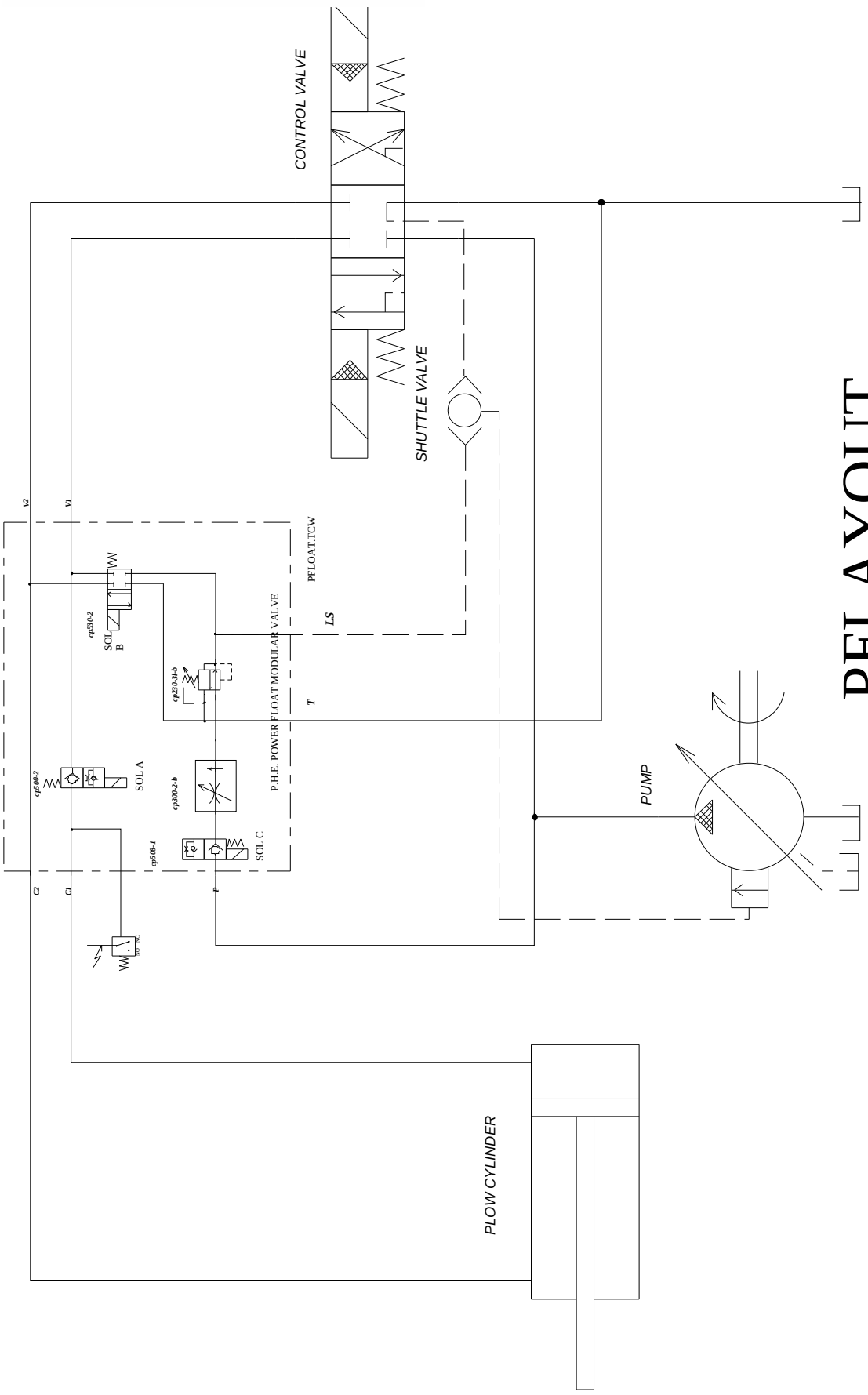
ACCU-CAST POWERFLOAT OPERATION FOR UNDERBODY PLOW

In normal operating mode, solenoid B & C are not energized. Solenoid A must be energized to lower plow.

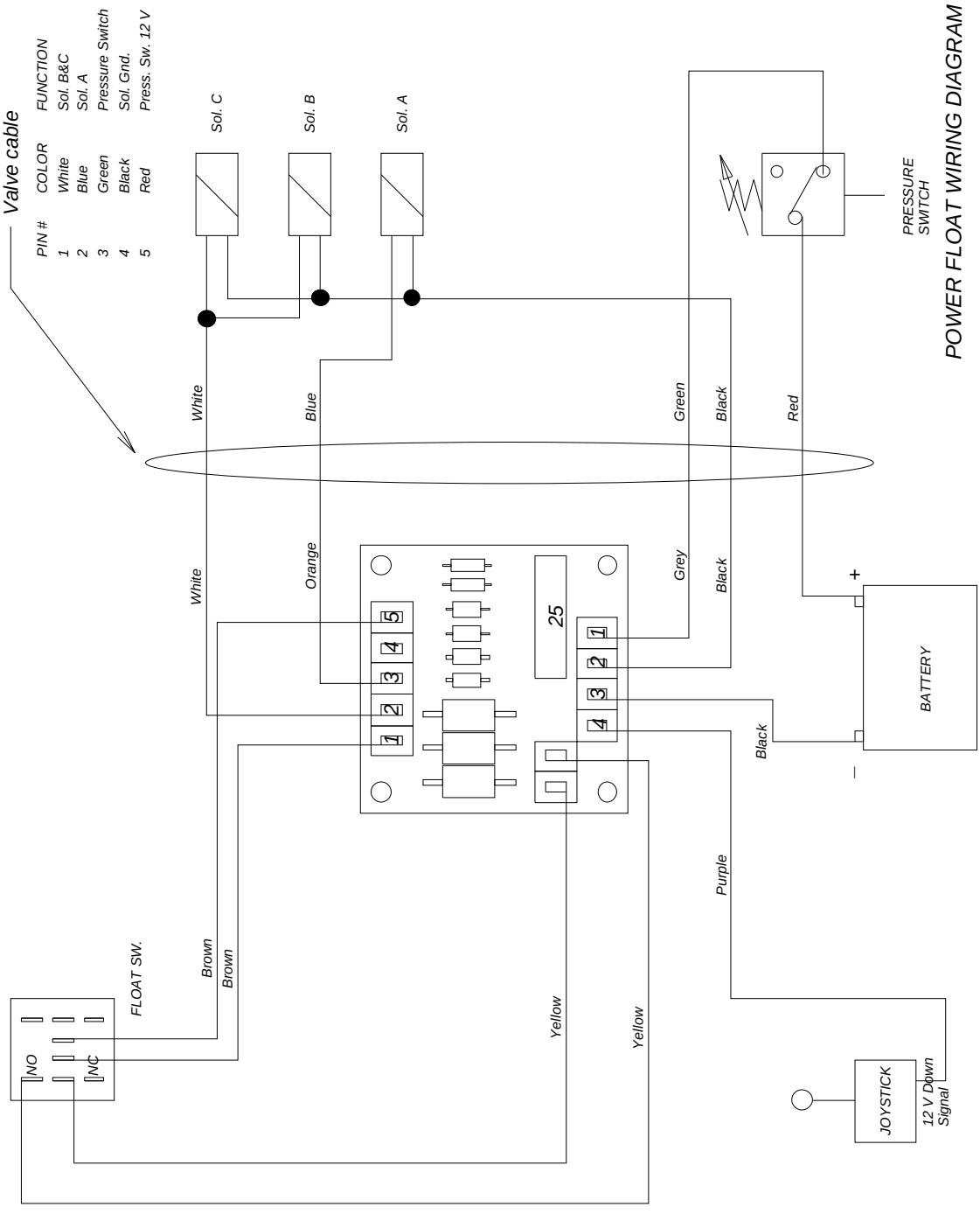
When float switch is turned on, the normally closed pressure switch is closed, allowing relays 2 & 3 to energize solenoids A, B, & C, supplying reduced pressure to the piston end o the plow cylinder, to carry some of the plow weight. The back flow feature of valves CP500-2 and the CP230-

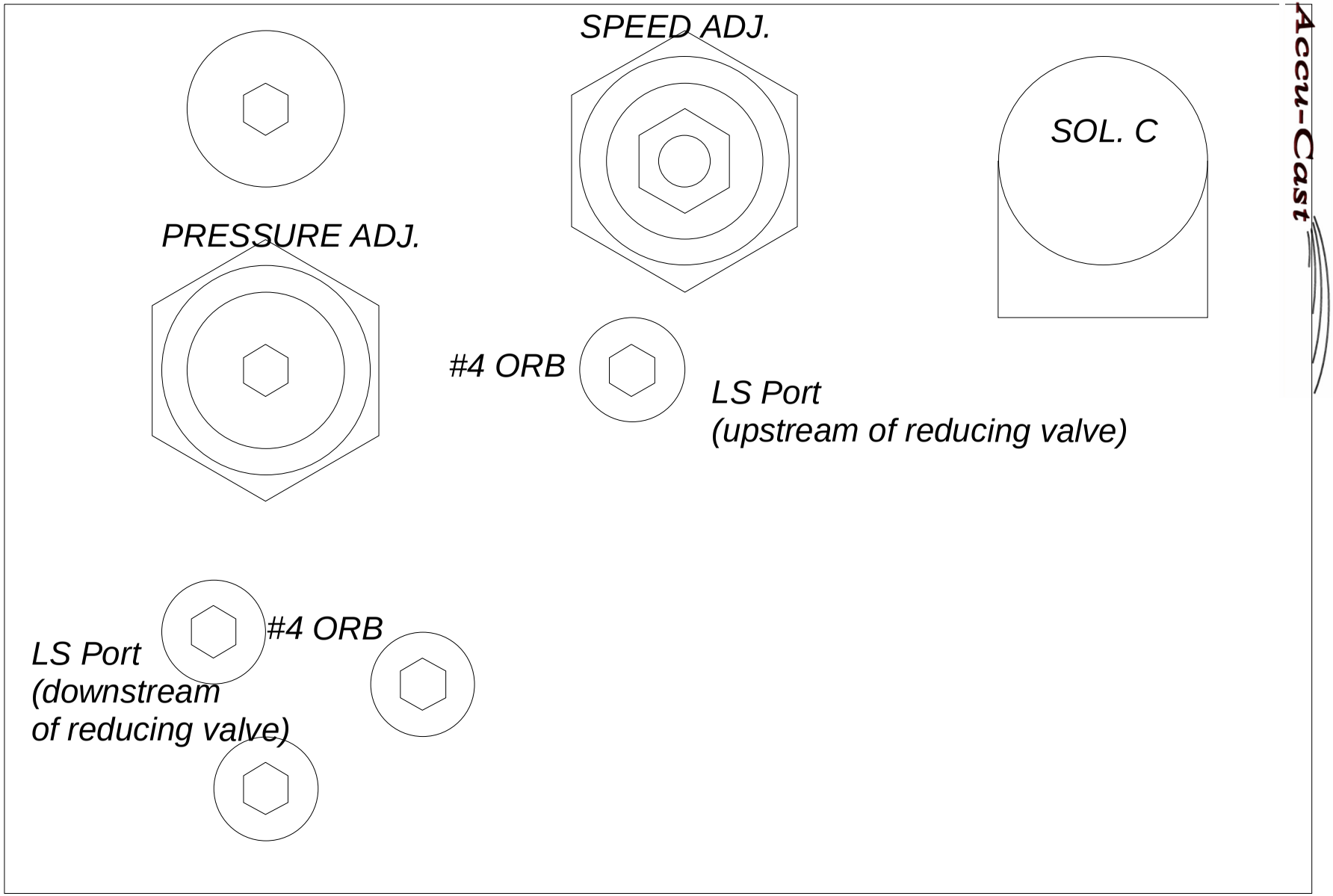
31-B pressure reducing-relieving valve will allow the plow to follow the contour o the road.

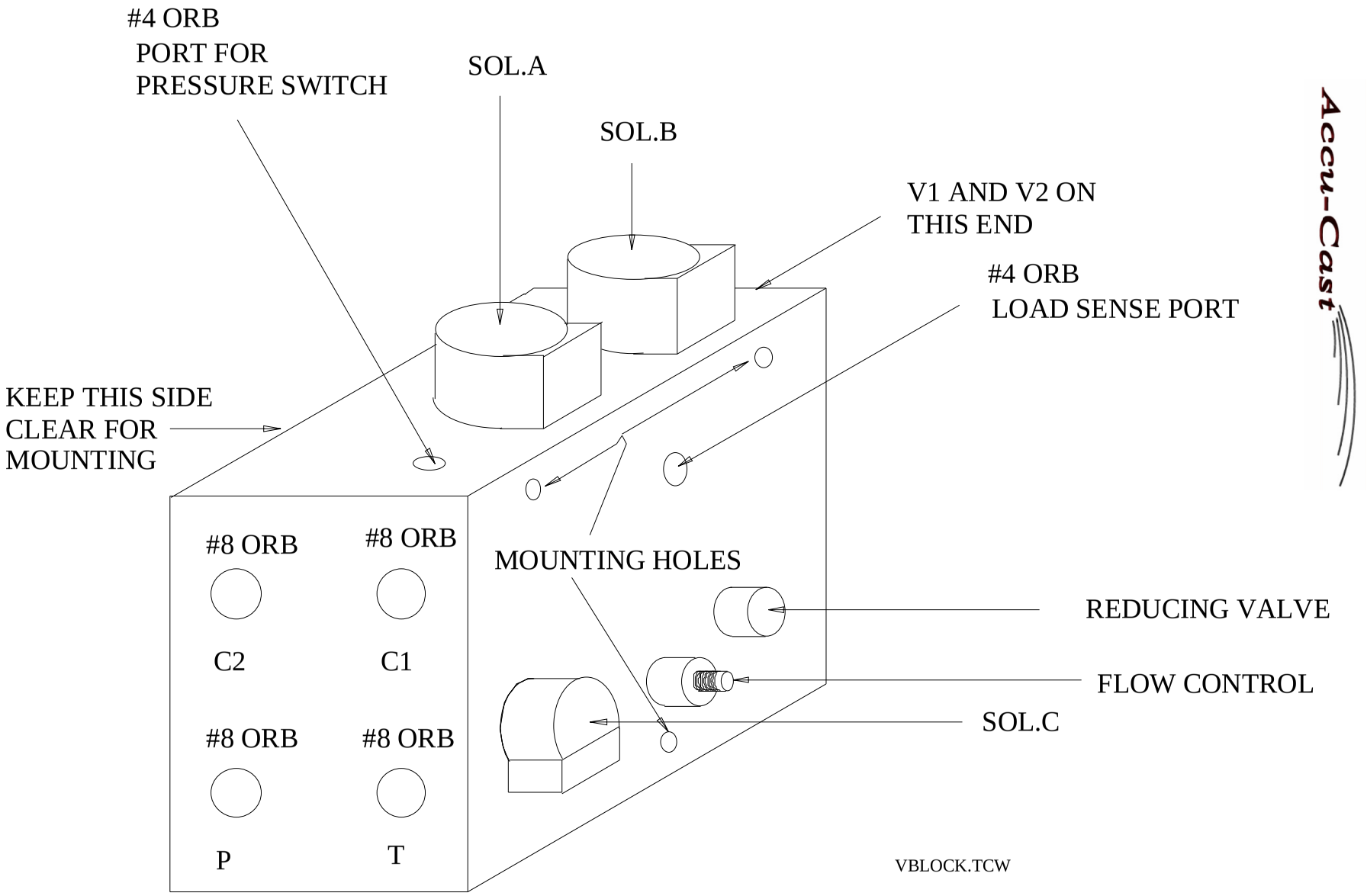
While the *ACCU-CAST* float is on, if the plow is raised the increased pressure at port C-1 will cause the pressure switch to open the circuit and de-energize solenoids A, B & C. The check at CP500-2 will allow the plow to be carried until solenoid A is energized by a plow down signal (The pressure switch is set at a value somewhat above that of the reducing valve). When the plow is lowered, the reduced pressure at port C-1 will allow the pressure switch to close the circuit and re-energize solenoids A, B, & C to return to the float function.


CONTROL VALVE
SHUTTLE VALVE
PFLOAT.TCW
P.H.E. POWER FLOAT MODULAR VALVE
LS
T
P
V2
V1
C2
C1
SOL A
SOL B
SOL C
cp510-2
cp210-3J-b
cp500-2
cp300-2-b
cp508-1
PUMP
PLOW CYLINDER

PFLAYOUT


POWER FLOAT WIRING DIAGRAM
Valve cable
PIN # COLOR FUNCTION
1 White Sol. B&C
2 Blue Sol. A
3 Green Pressure Switch
4 Black Sol. Gnd.
5 Red Press. Sw. 12 V
Sol. C
Sol. B
Sol. A
PRESSURE SWITCH
White
Blue
Green
Black
Red
White
Orange
Grey
Black
25
BATTERY
+
–
Black
Purple
FLOAT SW.
NO
NC
Brown
Brown
Yellow
Yellow
JOYSTICK
12 V Dpwn
Signal

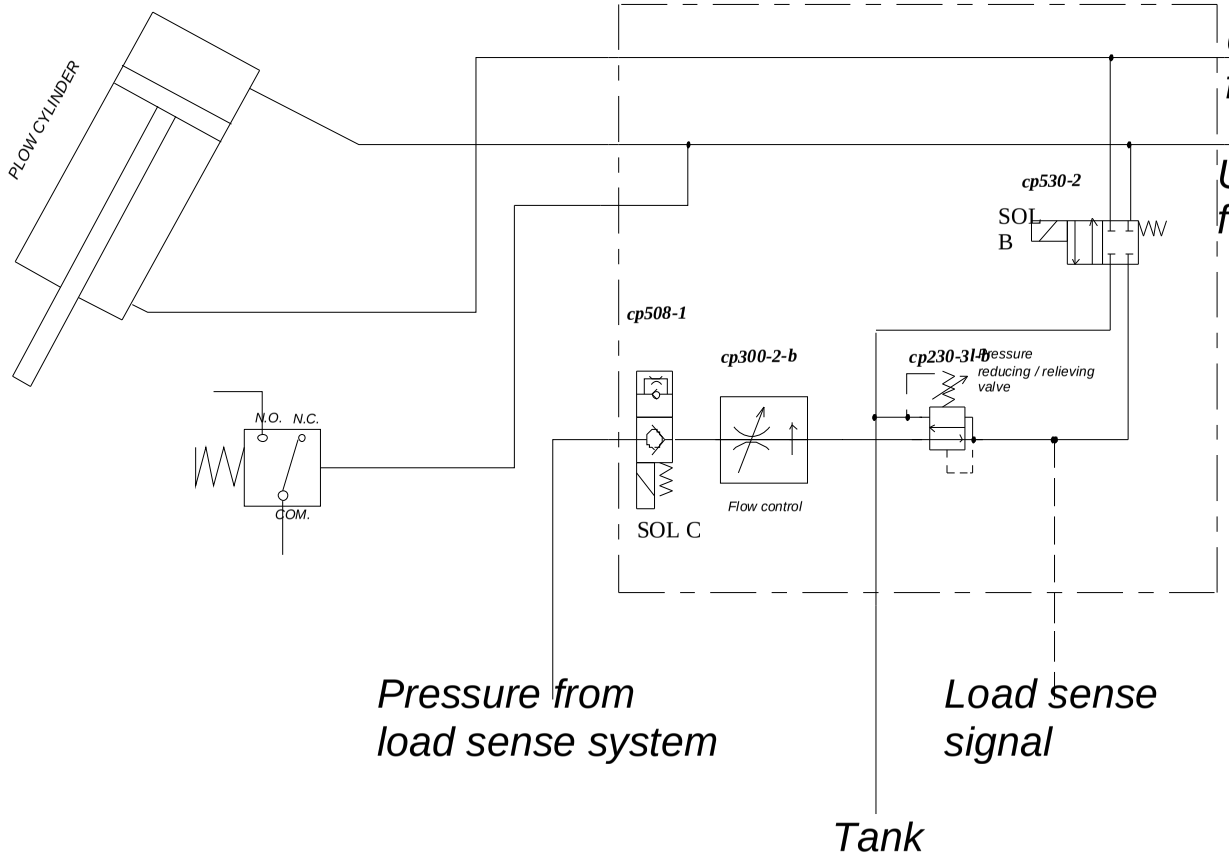

SPEED ADJ.
SOL. C
PRESSURE ADJ.
#4 ORB
LS Port
(upstream of reducing valve)
#4 ORB
LS Port
(downstream
of reducing valve)

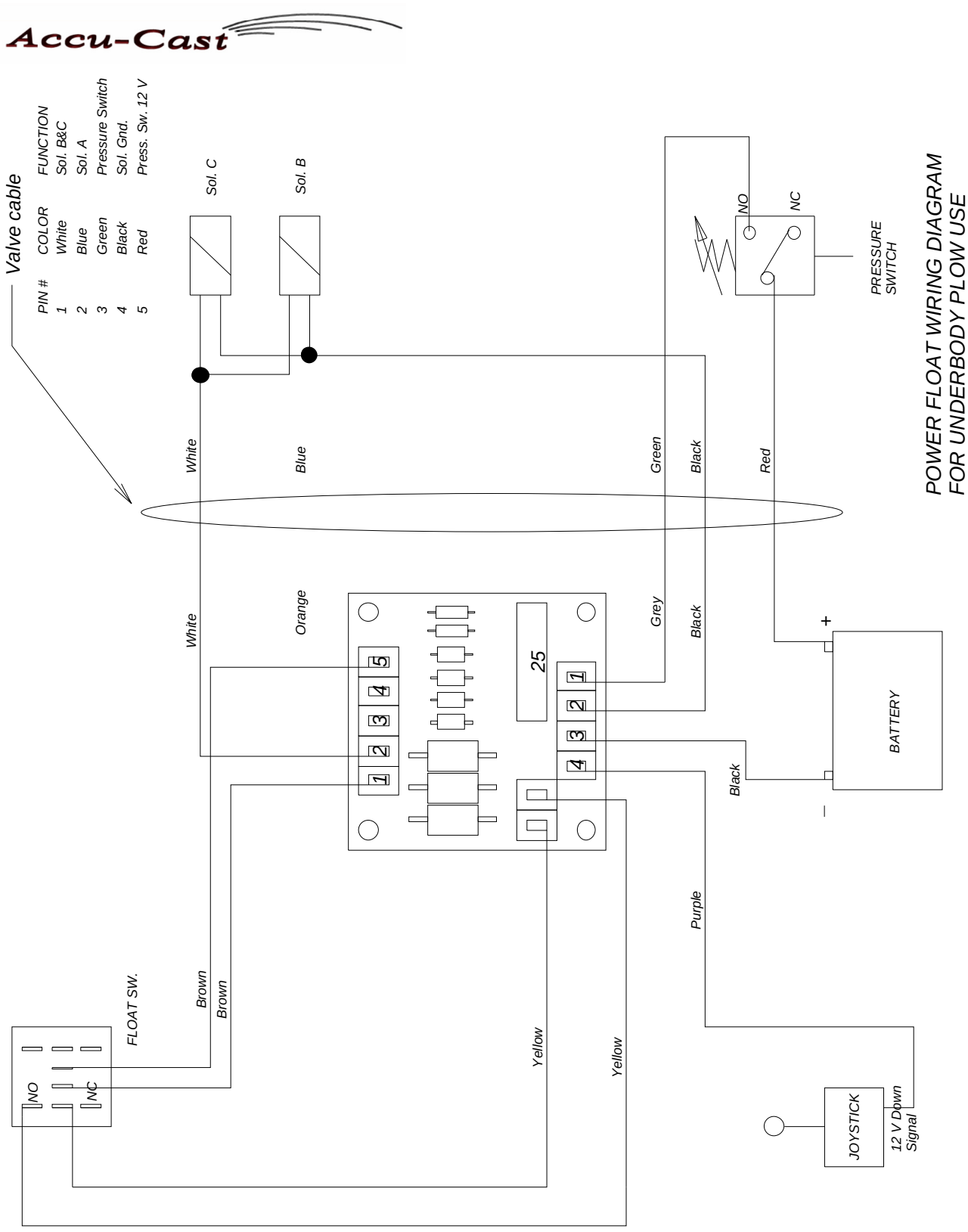


PHE Power float manifold layout

POWER FLOAT VALVE
FOR USE ON UNDERBODY PLOW

Please note that solenoid A is not required for this application.




Accu-Cast
Valve cable
PIN # COLOR FUNCTION
1 White Sol. B&C
2 Blue Sol. A
3 Green Pressure Switch
4 Black Sol. Gnd.
5 Red Press. Sw. 12 V
Sol. C
Sol. B
NO
NC
PRESSURE SWITCH
White
Blue
Green
Black
Red
White
Orange
Grey
Black
25
+
BATTERY
Black
–
Purple
FLOAT SW.
Brown
Brown
Yellow
Yellow
NO
NC
JOYSTICK
12 V Down Signal
POWER FLOAT WIRING DIAGRAM
FOR UNDERBODY PLOW USE